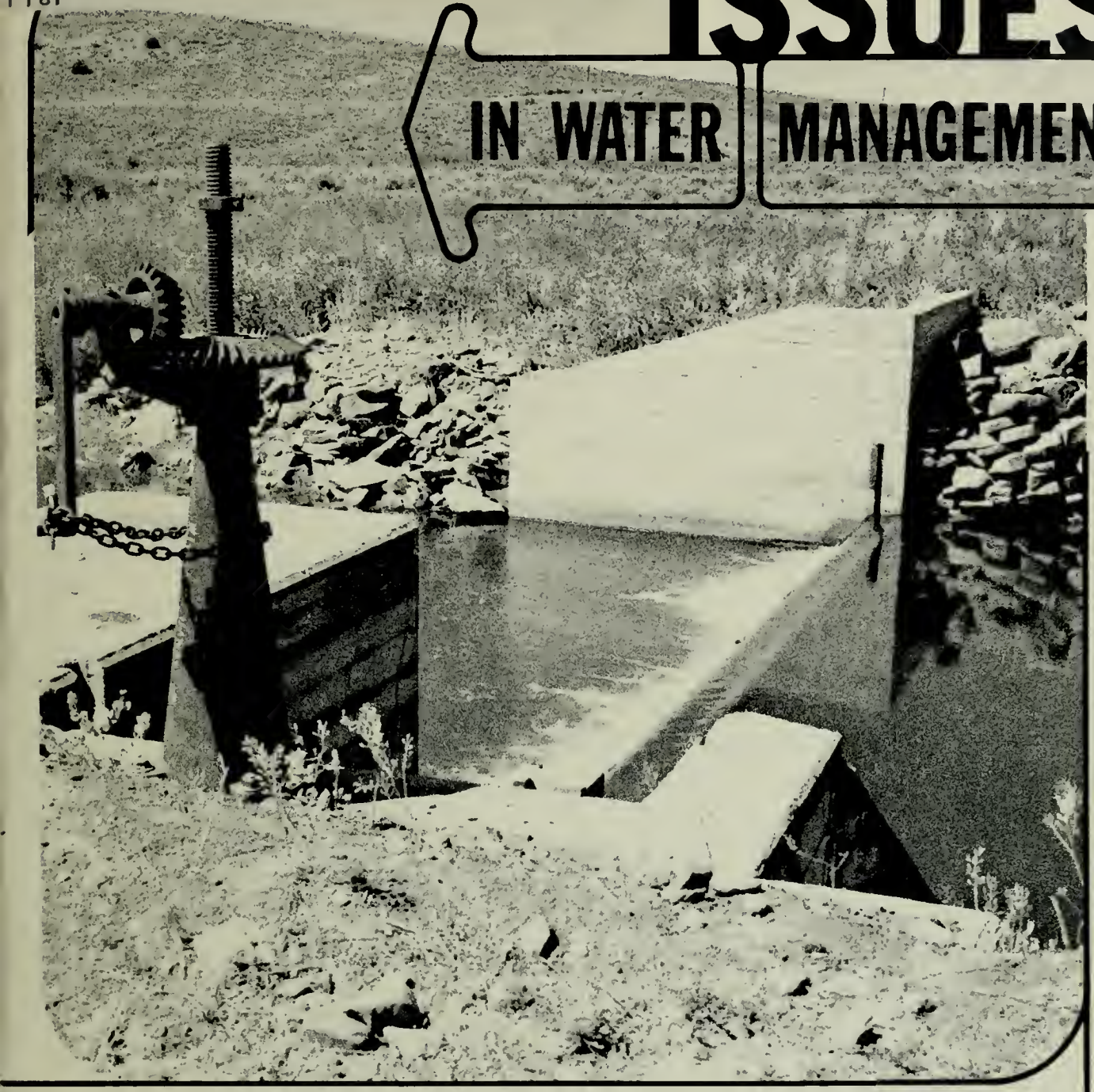
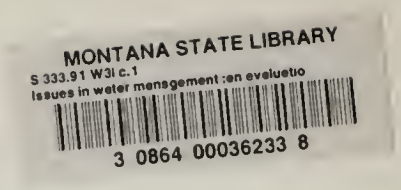
ISSUES IN WATER MANAGEMENT



An Evaluation
Of Montana's Water Policy



ISSUES IN WATER MANAGEMENT

An Evaluation of Montana's Water Policy

WATER RESOURCES DIVISION

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
32 SOUTH EWING
HELENA, MONTANA

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This report was prepared by DNRC's Water Resources Division, under the direction of Gary Fritz and Arnie Vinnard. Chris Hunter and Rich Brasch wrote the report, which was edited by Dave Lambert and Peggy Todd. The text was typed by Cheryl Cordier, and the cover was designed by D. C. Howard.

INTRODUCTION

If you were responsible for the development, management, and protection of Montana's water, how would you make sure you were doing it the way most of the state's citizens would want you to? That's the problem the Department of Natural Resources and Conservation has faced from the beginning. The legislature has directed DNRC to administer water rights, manage over forty state-owned water projects, and provide many vital services.

In 1979 DNRC decided that a review of the policies it operates under was in order, and DNRC's Director, with the approval of the Governor, appointed a Water Policy Review Advisory Council to provide a public voice in that review. The members of the Council were chosen to represent the spectrum of state viewpoints; they are listed following this introduction.

DNRC and the Council jointly chose the issues for discussion and prepared issue papers based on a review of relevant laws and discussions with experts and with other states. The Council and DNRC discussed those papers, the way DNRC had handled each of those issues in the past, and what changes in policy were needed. In the end, DNRC and the Council developed a new policy for each of the eleven issues discussed, and those policies are summarized in this report. The issue papers are available from DNRC. The summary of each issue includes the new policy, the reasons for it, and any legal or financial needs of DNRC if the policy is to be followed. The four main divisions of the report are: "Water Projects," "Water Allocation," "Water Resource Data Management," and "Montana's Floodplain Management Program."

The Water Policy Review Advisory Council Members Are:

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I. WATER PROJECTS

Montana's water supply depends on the amount of precipitation the state gets and on the amount of water stored in reservoirs. Since rainfall, especially on the high plains, may not be sufficient for good crop growth, ranchers and farmers rely heavily on stored water, including that stored in the reservoirs owned by the state. Most of it is used for irrigation; in fact, over 95 percent of the surface and ground water used in the state is used for irrigation. The rest is withdrawn for municipal, industrial, rural domestic, and livestock uses. The reservoirs also supply water for fish and wildlife habitat and for recreation. Because these projects are important to the state, many of DNRC's activities deal with them.

DNRC has initiated a technical assistance program designed to encourage small-scale, water-related projects. The program's function is to provide assistance to local groups in planning technically and economically feasible water projects. It is a logical first step in the development of any future water project, and may prove more useful as the demand for water increases.

DNRC also promotes the safety of Montana dams and, with the U.S. Army Corps of Engineers, assesses the condition of those dams whose failure could cause loss of human life or extensive property damage. DNRC has found many dams in Montana that require immediate attention if they are to be made safe. At present, many dam owners lack both the technical and financial tools to fix those unsafe dams.

In addition, DNRC administers over forty state-owned water projects. Most are water storage or distribution projects constructed by the State Water Conservation Board during depression and drought years. Over 140 dam and reservoir projects were built, and 815 miles of canals with a carrying capacity of 260,000 acre-feet of water. Much of Montana's agriculture depends on the water provided by these dams and canal projects. However, because of changing design standards, inadequate maintenance and repair, and deterioration owing to age, some of the projects now need major rehabilitation. In other cases, the state now incurs costs associated with ownership and management of projects that could reasonably be assumed by the water users.

Finally, DNRC helps to establish state positions on proposed federal water projects in Montana. Many of the water development, flood control, and hydropower projects in Montana have been constructed by federal agencies. Making state participation in planning federal projects more effective will benefit Montana.

This section examines the major water projects issues facing the state and the policies that have been developed to address those issues.

TECHNICAL ASSISTANCE PROGRAM FOR WATER PROJECTS

The Technical Assistance Program (TAP) for water projects was established within the Water Resources Division during fiscal year 1976. TAP was created to encourage and assist in the development of locally-sponsored, small-scale water projects throughout the state of Montana. The approval of a budget request submitted to the 1975 legislature resulted in the addition of money to DNRC's general fund to be used for TAP. The program's fiscal year 1979 budget expenditure was $31,790.

TAP provides professional advice on the preliminary engineering, economic, and legal aspects of almost any locally-sponsored water project proposal. Groups assisted through TAP pay no fees. The program assists in the evaluation of water project proposals before major local financial resources are committed. A TAP study results in a prefeasibility report covering such details as a description of the project, alternatives, preliminary assessments of engineering, economic, and financial feasibility, necessary permits, possible sources of funding, and environmental impacts. It is not meant to be a full feasibility or design study. Rather, it provides a means for determining whether to pursue these more detailed and costly aspects of project development.

DNRC provides an engineer and an economist for the study. Their formal involvement ends after the final report is issued. It is the responsibility of the local groups to act on TAP recommendations.

Projects eligible for consideration include storage for irrigation and flood control, small water supply systems, drainage projects, and erosion control. Local governments, conservation districts, cooperatives, and other local groups are eligible for TAP assistance.

TAP fills a need not met by federal assistance programs that usually aim at providing benefits to a large number of people; water development often ranks lower than resource management in such federal programs. Furthermore, TAP's simplified program requirements are easier to meet, and the services are free, but the program does require some initiative from the water users.

TAP's History

TAP has handled eight project proposals since the initiation of the program in 1976. As of May 1980, prefeasibility reports on six project proposals had been completed. Final TAP reports have been prepared for a trout processing facility, a rural water supply system, three irrigation storage projects, and a gravity sprinkler irrigation system. The only project constructed as originally planned was the trout processing facility.

An information campaign aimed at increasing public awareness of the services provided through TAP was started in early 1980. It was apparently successful; many requests for assistance have since been received by DNRC. Reports on at least three more proposed water development projects are scheduled for completion by July 1981.

Three Options for the Future of TAP.

The first option is to continue the present program, providing assistance in the evaluation of small-scale water projects using existing staff. There would be no attempt to focus the now-broad program on any particular aspect of water development or management, nor would any attempt be made through the program to promote specific water projects.

Currently, TAP also functions as a coordinator between interested project sponsors and technical assistance programs in other branches of government—of which there are several. For example, requests for assistance in evaluating water storage and supply systems for rural and small communities can be referred to the Old West Rural Water Office. Technical assistance requests for the evaluation of projects to control localized sediment and erosion problems are handled by the federally-funded Conservation Operations Program. Individuals requesting such assistance through TAP might be referred to their local conservation district or SCS office. The SCS's Small Watershed Program is designed to deal with flood control, among other problems, in watersheds less than 250,000 acres.

The second option is to drop TAP completely. Since TAP is not required by either state or federal law, there would be no adverse legal consequences of dropping the program.

The third option is to expand TAP to stimulate water development. Under this option, TAP would organize local sponsors, solve problems hindering development, and link local and federal administration. The expanded program would also promote new tributary and offstream storage projects. Under this option, the proposed team would be made up of a project coordinator and an engineer.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

The Technical Assistance Program will continue as it has in the past. The program guidelines that define the eligibility of projects will remain general. The program will be publicized locally.

WHY THEY ADOPTED IT

TAP fulfills a need by providing free, relatively prompt assistance to local sponsors in evaluating the feasibility of proposed water projects. If guidelines establishing the types of projects eligible to receive assistance through TAP remain flexible, a variety of water projects may be considered.

WHAT DNRC NEEDS TO ACCOMPLISH IT

DNRC's present staff and funding are adequate.

MONTANA'S DAM SAFETY PROGRAM

The National Dam Safety Program

The federal government, through the Corps of Engineers, has conducted a comprehensive inventory of dams in Montana that (1) equal or exceed 25 feet in height from the natural bed of the stream or watercourse to the maximum water elevation or (2) have an impounding capacity at maximum water elevation of 50 or more acre-feet. Nearly 3,500 such dams have now been identified in Montana. Only three states, Texas, Kansas, and Oklahoma, have more dams.

Besides being rated by size, ownership, and location, dams were also rated by hazard potential. High-hazard dams are those located so that dam failure would cause flooding of three or more habitable structures, or extensive property damage. Significant-hazard dams are those located so that failure would cause flooding of one or two habitable structures or appreciable property damage; failure of a dam classified as low-hazard would cause neither flooding of habitable structures nor appreciable property damage. Of the approximately 3,500 nonfederal dams identified in the inventory, 120 were classified as high-hazard structures, 680 as significant-hazard, and over 2,600 as low-hazard.

In 1978, DNRC received a grant through the Corps of Engineers to support a state-operated inspection program for dams identified in the inventory. The inspection program included all of the high-hazard dams, and some significant- and low-hazard structures were also inspected. Of the 120 high-hazard dams identified, 112 had been inspected by December 1, 1980. Final reports for seventy-seven

dams have been prepared. Of these, fifty-eight were considered unsafe, mainly because their spillways were insufficient to handle the probable maximum flood of their streams, or were structurally unsound; eight require emergency repairs.

Problems in the State Dam Safety Program

Since 1973, state-owned dams have been inspected annually by DNRC's dam safety engineer. The inspections have revealed many deficiencies, some of which have required emergency repairs. Before 1979, approximately $30,000 per year had been allocated by each of the legislatures to cover major expenses for the succeeding biennium. In 1979, the legislature did not appropriate the necessary funds to continue this inspection program, presumably because of the availability of federal funds for dam safety. As a result, inspection of the twenty-one state-owned, high-hazard dams now depends on money from the Corps. Corps funding will expire in September 1981. Unless Montana appropriates money for this purpose, annual inspections of state-owned and other dams will cease altogether.

The present Montana dam safety law assigns to county government many of the major duties for dealing with identified dam safety problems. For example, the county attorney is responsible for ensuring that the owners of unsafe dams identified through the inspection program bring those dams up to an acceptable level of safety. The financial resources available to the owner, the physical condition of the dam, and the intensity of land use in the hazard area downstream must all be taken into account. Frequently, the technical expertise required to arrive at a reasonable decision on this and other dam safety problems is not available locally.

Another shortcoming of the state dam safety law is that it does not require a review of a proposed dam's design before construction to assess its structural adequacy. That requirement would help prevent dam safety problems in the future.

In Montana, there are few sources of technical assistance for the owner of an unsafe dam who wants to repair it. The Soil Conservation Service offers technical assistance in dam design, but this assistance is generally available only for dam construction, not for repair. Current limitations on money and staff prevent DNRC from offering such help. Engineering consulting firms are the principal source of technical assistance for dam repair efforts.

Financing dam repairs presents an even larger problem for many owners. Making needed repairs or modifications is apparently beyond the immediate financial capabilities of many, including local governments, public corporations, and other nonfederal institutions. Even the cost of the engineering study will present a severe hardship to many owners. This lack of technical and financial assistance to owners will severely hamper efforts to make unsafe dams safe. This is a problem statewide and nationwide.

The State's Options

Option 1: Take No Action on the Dam Safety Problem

If DNRC were to pursue this option, there would be no formal dam inspection program in Montana after the federal programs expire in September 1981. Presumably, no funds would be appropriated nor legislation adopted by the 1981 Montana Legislature to support a state dam safety program for the succeeding biennium. This inaction would have several disadvantages:

1. Inspections of state-owned dams would cease. Subsequent declines in the safety of these dams might go unnoticed until failures occur or until the need for emergency repairs becomes obvious.

2. The time, money, and effort expended in developing the inventory and inspection program discussed above would, to a large degree, be wasted. The federal and state programs would not have achieved their purpose if no action were taken to alleviate the hazards.
3. County attorneys would be responsible for enforcement, but would have to ensure compliance with the state dam safety law without benefit of technical guidance or other help currently provided through the state dam safety program.
4. The state would be left with virtually no means to prevent future dam safety problems resulting from structural deficiencies.

Option 2: Establish an Effective Dam Safety Program

There are three requirements for an effective dam safety program in Montana

1. State-owned dams should be inspected annually. The state of Montana owns and is liable for the operation of twenty-five dams. Before the current biennium, state-owned dams were inspected under a state program similar to that proposed in this option. Every year, the inspections found serious deficiencies that would otherwise have gone unnoticed.

   Under this option, each of the state-owned dams would be inspected annually. During the last biennium, DNRC was able to inspect its dams under the National Dam Safety Program. Because this program expires in 1981, the state legislature would need to fund one full-time engineer to carry on the inspection program. Money obtained from the operation of the state-owned dams could be earmarked to pay the costs of annual inspections.
2. The program should include all nonfederal dams, both public and private. In order to enforce the existing state dam safety law, and because of the unsafe nature of many dams in Montana, an increased effort must be made to repair them. The responsibility for repairs on an unsafe dam would rest with the owner. The present Montana dam safety law assigns county attorneys the responsibility of seeing that the necessary action is taken. DNRC will have to assist both dam owners and county attorneys in deciding the proper action to take in correcting the deficiencies. That decision requires that for each designated unsafe dam: (1) engineering studies be performed to determine the flood level for which the spillway should be designed and the modifications in the discharge or storage capacity necessary to safely route this flood; (2) a stability analysis of the embankment be conducted by a qualified geotechnical engineer to determine whether modifications are needed; (3) an update be made of the operation and maintenance requirements, based on periodic inspections performed by engineers experienced in dam design and construction.

   Conflicts between the county attorney and dam owners are likely to arise when the county attorney attempts to determine repairs needed to bring an unsafe dam up to an acceptable level of safety, The more repairs deemed necessary, the greater the expenditures required of the owner. DNRC may be called upon to mediate between the two parties.
3. The program should include a design review of all proposed dams. To assure compliance with standard safety criteria a design review for dams to be constructed in Montana would ensure that the dam design complies with standard safety criteria. The first task under this program would be to establish the criteria, which would vary depending on the potential hazards a particular dam would create. All proposed dams that merit a high- or significant-hazard classification would be subject to the dam design review requirement. DNRC approval of dam designs would be required for new dams in this category. Proposed dams classified as low hazard would be exempt from state review, but local government authority over these dams would remain. DNRC would encourage compliance with design standards by requiring that the project's professional engineer guarantee that the proposed dam would be constructed according to the safety guidelines specified during the design review process. This program would require two technical experts, (a geotechnical engineer and a hydrologist), a technician, and a half-time secretary. A fee could be charged to the project owner to repay the general fund.

The owner of a dam would assume the responsibility for proving that a low-hazard classification is warranted. The professional engineer hired by the owner to design the dam should, in most cases, be capable of making such an assessment. DNRC would then review and approve or deny the classification proposal.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC will seek the authority and funding to establish a program that will:

1) Inspect state-owned dams annually.
2) Include nonfederal dams, both public and private.
3) Establish a design review process for nonfederal dams to ensure compliance with standard safety criteria.

WHY THEY ADOPTED IT

Because the dam safety problem in Montana is a threat to public welfare, immediate steps should be taken to strengthen the present program.

WHAT DNRC NEEDS TO ACCOMPLISH IT

Substantial changes in Montana's dam safety law and a budget increase for DNRC's Dam Safety Program will be needed to implement the recommended policy. The Montana dam safety law will need to be modified to provide the necessary legal authority to require a mandatory design review for proposed dams, an inspection program during construction of a dam, and periodic safety inspections of existing dams. In addition, all duties and responsibilities for dam safety presently assumed by the county attorneys would be transferred to DNRC under this proposed legislation. Table 1 is a rough budget estimate for funding the dam safety program.

TABLE 1
PROPOSED DAM SAFETY BUDGET

	Funding Source	BUDGET FY 82	BUDGET FY 83
Inspection of State-owned Dams	Revenue Fund	$ 40,000	$ 40,000
Statewide Dam Safety Program for Existing, Nonfederal Dams, Public or Private	General Fund	$120,000	$135,000
Dam Design Review Program	General Fund	$150,000	$175,000
TOTAL		$310,000	$350,000

REHABILITATION OF STATE-OWNED DAMS

Montana owns twenty-five water storage projects. The largest are those on the Tongue River in Big Horn County and Deadman's Basin in Golden Valley and Wheatland counties, with a combined storage capacity of almost 142,000 acre-feet of water. All of Montana's water storage projects are rock- or earth-filled structures storing primarily irrigation water. Some projects include spillways, outlet works, and drain systems.

The preceding section explained the importance of a dam safety program in Montana and the state's liability owing to the twenty-one high-hazard dams owned by the state. This section assesses Montana's ability to finance the rehabilitation of those dams.

The spillways of many state-owned high-hazard dams are too small to handle large floods. How that is to be remedied will have to be decided for each dam individually, since the condition, importance, and hazard potential of each dam are unique. For each dam, the state has three alternatives: (1) rehabilitate the dam, (2) breach the dam, or (3) do nothing.

The First Alternative: Rehabilitate the Dam

All of the state's dams could be repaired and made safe; the major problem is financing. DNRC estimates that it will cost between $150 million and $200 million (1980 dollars) to rehabilitate all of the unsafe state-owned dams. At present, no single source of revenue has been identified that can pay the total cost of rehabilitation for all dams. The costs of rehabilitating each individual project are so high that nearly all of them will require some type of subsidy. There are six ways spillway rehabilitation may be partially financed: user payments, general fund appropriations, hydropower revenues, federal grants and loans, development of unique project benefits, and coal severance tax bonds. Each of these methods has limitations.

1. User Payments

It is doubtful that those who benefit directly from most state-owned reservoirs could pay for rehabilitation of the projects. The major marketable benefit from state dams is irrigation water, and irrigators cannot afford to pay the cost of rehabilitation to maintain existing water supplies. In some cases, the sale of additional water to irrigators could help to finance spillway rehabilitation. But most projects cannot sell additional water to help fund rehabilitation because there is no demand for this additional water.

Industrial water sales bring high prices, but industrial markets for water from state dams are limited, with little potential to develop; some projects are too far removed from any likely market. Furthermore, local residents may oppose any state policy that actively seeks to develop an industrial market for water.

Many state-owned dams provide recreation and flood control in addition to marketable water. Capturing repayment from persons who benefit from recreation and flood control is not easy. There is no established price for a "unit" of flood control or recreation.

In short, revenues from water sales would not cover the full cost of spillway rehabilitation for most state projects. Some projects are closer to financial self-support than others; however, nearly all will require a supplemental source of revenue to pay for rehabilitation.

2. General Fund Appropriations

The state legislature can authorize financing of part of the cost of spillway rehabilitation by taxing Montana citizens. Past general fund appropriations have been insufficient to provide the revenue needed for most projects. However, the general fund might be adequate to supplement user

payments. Funds for repair of state projects have also come from the Resource Indemnity Trust Fund and Renewable Resource Development Fund.

If general fund appropriations were used to rehabilitate a state dam, the taxpayer would be subsidizing those who receive irrigation water, recreation, and flood control benefits at less than full cost. However, if the legislature believes that an agricultural economy contributes to the quality of life in Montana and that providing scattered recreation is an important benefit, it might be justifiable to make appropriations proportionate to the perceived cost of those benefits.

3. Hydropower Revenues

The 1978 Conceptual Plan For Montana Water Resources Projects (Montana DNRC, Helena) called for installation of hydroelectric generators on state-owned projects. The revenues from electricity would help support spillway rehabilitation and could make funds available to rehabilitate state projects or build new ones.

Concerning pricing the electricity generated by state-owned dams, DNRC recommended in the Conceptual Plan, "a rate structure sufficient to make a return to the state of approximately $1,000,000 per year in addition to debt-amortization and O&M expenses. This magnitude of profit is considered necessary to get on with the business of upgrading and rehabilitating other state water projects." But the timing of that profit is important. Even if all three proposed units are developed and electricity sales return one million dollars annually, those revenues may not be available in time to finance rehabilitation of other state dams. Until the Corps' safety inspections are complete and can be evaluated, the state will not be able to decide which projects are in most urgent need of repair. In any case, it is unlikely that the electricity revenues would provide more than a supplemental source of funding for repair of state dams.

4. Federal Grants and Loans

The state usually receives assistance for project rehabilitation from the federal government. Generally, federal money has been used to fund up to 50 percent of the cost of rehabilitation projects that cost around $2,000,000. It is hard to get federal money for more expensive project repair.

Federal funds are available from such agencies as the Soil Conservation Service (SCS) and the Water and Power Resource Services(WPRS). The state also receives technical help from federal agencies such as the Corps of Engineers, SCS, and WPRS. Federal money is not dependable because federal laws and programs can change substantially in a short time, eliminating some aid to states.

5. Development of Unique Project Benefits

Some state projects have unique assets that can be used to pay for spillway rehabilitation. For example, DNRC explored the possibility of mining coal beneath the Tongue River Reservoir as a means of paying part of the costs of a new spillway for the Tongue River Dam. Ranch buildings located on the Nevada Creek Project are being renovated so that they may be leased. Income, under current law, would go to the general fund, but could be earmarked by the legislature for project rehabilitation.

State-owned projects would each be evaluated for unique project assets that have income-producing potential. Development of any such unique project assets would be pursued. However, most project assets other than water sales revenue and potential hydropower generation will not pay much of the cost of project rehabilitation.

6. Coal Severance Tax Bonds

Spillway rehabilitation could be financed by selling long-term bonds backed by the coal severance tax. As already discussed, most water users who purchase water from state-owned dams cannot af-

ford to repay the total cost of spillway rehabilitation. To the extent that user payments fall short of covering bonded indebtedness, the coal severance tax would be diverted to a bond fund in sufficient quantities to cover principal and interest payments when they come due. The legislature would need to approve use of the severance tax for these projects.

The Second Alternative: Breach Unsafe State Projects

If the state decides that a project should be made safe, the state could decide to breach the dam—remove it and eliminate the reservoir. An obvious cost of breaching is the cost to remove the project or alter it sufficiently to make it safe. That cost would probably be borne by the taxpayers of Montana. In many cases the cost of breaching is about the same as the cost of rehabilitation.

The second cost of breaching a project is the loss of project benefits. Existing state dams provide irrigation water for about 100,000 acres of land. If a project were breached, agricultural production would decline, as would income to farmers and ranchers. The tax base of Montana would also decline. Recreation and flood control benefits would also be foregone if a project were breached.

Breaching a state project would require a full analysis to determine the magnitude of the social, economic, and environmental costs of such an action. Breaching costs—such as the costs of project removal, decline in agricultural output, and decreased economic benefits—might be more than any state or federal support necessary to pay for project rehabilitation. Environmental effects and political reactions may be effective constraints to breaching projects.

The Third Alternative: Take No Action

The state has a final option: it may decide to do nothing to rehabilitate a dam. This option apparently costs nothing, but the eventual price could be high. If no repairs are made, the risk of a dam failure increases as time passes. If a state dam were to fail during a large storm, loss of life and extensive damage to property could result, and the state would be liable.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC will try to maintain existing state-owned dams unless the costs clearly outweigh the benefits of the project to Montana. The economic analysis to evaluate each project will consider the value of that project to the local economy. DNRC will seek public input on all rehabilitation decisions.

WHY THEY ADOPTED IT

Rehabilitation of state-owned dams would result in both public and private benefit. Many of these projects provide stored water for irrigation and stockwatering. Flood control is of value to both sectors, as is recreational use that many reservoirs make possible.

WHAT DNRC NEEDS TO ACCOMPLISH IT

Rehabilitation requires several steps. First, state-owned dams would be ranked according to their hazard and safety condition. Second, emergency warning systems and evacuation plans would be prepared for each dam, establishing the procedures to be followed should failure of a dam appear imminent. Third, DNRC would decide, following social, economic, financial, and limited environmental assessments, whether a given dam project should be breached or rehabilitated. Fourth, the necessary funding must be acquired to complete the selected alternative. Sale of

coal severance tax bonds could provide a possible major source of funding for the rehabilitation of state-owned projects. Other financing methods would also be used, such as user payments, hydropower revenues, federal grants, and loans such as Small Reclamation Projects Loans (PL-984). Finally, DNRC would contract for a detailed design and construction plans and specifications.

DNRC proposes to complete repairs or removal of all projects within the next twenty to twenty-five years. It will be necessary to start one project per year to meet this schedule. Approximately three to five years would be required to rehabilitate each of the unsafe dam projects, so several projects would undergo rehabilitation at the same time. Engineering consultants would carry out most of the technical work, under DNRC supervision.

To implement the proposed project rehabilitation program, approximately $663,000 would be needed in the coming biennium to prepare feasibility reports needed to make applications for four to six federal loans to rehabilitate state-owned dams and to develop downstream emergency warning and evacuation plans for them. An additional $80,000 would be needed to finance safety inspections for state-owned dams.

DISPOSITION OF STATE-OWNED CANAL PROJECTS

The state now owns and manages twenty-six canal projects. DNRC prefers to turn ownership of a number of these canal projects over to the users. The Board of Natural Resources and Conservation favors turning titles for canal or pumping projects without significant impoundment and public benefits over to the involved water users associations as soon as the projects are paid for, assuming the projects are in reasonably good condition.

Too much DNRC time is now spent on matters that could be handled by the local water users associations. Turning ownership of canal projects over to the users is feasible because the liability associated with canal projects is low enough that insurance can reasonably cover any liability from canal failure. At present, local users must request ownership of a canal project before the state will consider turning the project over to them.

There are, however, a number of concerns that affect the state's ability to dispose of its canal projects. Contractual obligations assumed by the state in years past often limit its ability to relinquish project ownership. Because DNRC is bound by its contracts with the water users associations, it cannot change the project ownership provisions until the contracts expire or need to be renegotiated or until users no longer want the project. These things happen infrequently. When opportunities to renegotiate user contracts do arise, the negotiations have proven difficult. Users have been unwilling to accept ownership of a project for several reasons. Some users want continued state ownership of canals because, when disputes arise among users, DNRC has the authority to enforce its decisions. The Brady Project—a canal that supplies a town with water—is an example. DNRC contributes nothing to the project, but users will not accept title to the project because of the possibility of a dispute that they might want DNRC to arbitrate.

Users frequently cite the liability associated with a given canal project as a reason for refusing to accept its title. Although all users associations currently carry their own insurance policies, they feel more secure knowing that the state still owns the project. As explained above, the liability associated with a canal project is substantially less than that associated with a reservoir project and can be reasonably covered by insurance.

Water users are also reluctant to assume the costs of management of their own projects. DNRC provides services to water users associations at no cost to users. Auditing, billing, and accounting for canal projects are done by DNRC employees. DNRC also inspects the projects and locates consultants to perform work for associations. The approximate annual cost incurred by the state in providing these services to the water users is substantial. If local users were to accept ownership of a canal project, all accounting, auditing, billing, and project inspection would be the responsibility of the association. The associations would also have to locate contractors and consultants when needed, and arrange for their own financing of large expenditures.

Finally, DNRC may not wish to dispose of all structures of a canal project because some of them provide revenue. For instance, the Broadwater-Missouri Project is a canal delivery system fed by a diversion dam that raises the level of the Missouri River. The head on the dam is sufficient for low-head hydroelectric power production. DNRC would prefer to retain ownership of this project because of the possibility of selling electricity.

The four options DNRC has considered for the ownership and management of canal projects are presented below.

The First Option: Develop a Program to Divest the State of Ownership of the Projects

DNRC could develop a program for active disposition of canal projects that would fulfill one objective of the Conceptual Plan. To develop and carry out such a plan, DNRC would need more personnel. The short-term costs of this objective could be high, because a great deal of time would be spent in disposing of projects. Because each project has a unique set of legal conditions, at least one lawyer would be needed. Without increased staff, much of the work can be done by the staff now assigned to the disposal of the Daly Ditches Project. This staff will be available in about two years and would be able to assume this program.

Costs to water users would increase when they gain ownership of projects. Costs to each association would vary according to the condition of the project, the association's inspection program, and the type of consultants hired. Many private ditch companies and water users associations already manage on their own without state assistance.

Legislation that would allow DNRC to cancel all outstanding debt against projects could encourage disposition of state-owned canals. The twenty-nine state canal projects have an outstanding debt of $4,032,840. Legislation similar to MCA 85-1-403 to 407, which allows DNRC to write off or cancel any debts against the Daly Ditches Project and to begin disposition of that project, would be adequate. This statute also directs DNRC to "establish procedures for canceling and writing off accounts receivable, and the procedures shall include the reporting of the canceling and writing off of the accounts receivable to the next legislature." If these procedures could be applied to other projects as well, and adequate staff were available, DNRC would be able to begin the disposition of canal projects.

The state would dispose of canal projects selectively. While canals may not provide marketable benefits, the diversion dams associated with some of them have enough head to generate electricity.

The Second Option: Continue the Current Course of Action

DNRC relinquishes projects when the opportunity arises, either through contract renegotiations for project rehabilitation or when directed to by the legislature. To continue existing administration and disposition of canal projects DNRC would not need additional manpower or budget unless a few projects required contract renegotiations at the same time. However, the disposition of troublesome projects is not helped by this process. For instance, DNRC could not have relinquished the Daly Ditches Project under a program that relies on contract negotiations to make it possible to transfer project ownership.

Under this option water users would not have to accept ownership of projects if they don't want to, nor would users who believe that they are not capable of doing so have to accept ownership under this option.

The Third Option: Charge Water Users for the Cost of Administration

An option that allows the state to charge for billing, auditing, accounting, and project inspection would provide a much smaller subsidy to water users. It could also allow an economical means of project administration because the state already provides such services at a cost less than that charged by private contractors.

Costs to water users would increase under this option. The cost to individual users would vary from project to project, depending on the number of users who would be required to pay costs of administration of projects.

The Fourth Option: Investigate the Problems of Disposing of Canal Projects

Further study of these problems could consider possible solutions to the problems of disposing of canal projects in greater detail. Perhaps more management options could be identified, and costs to the state and local water users more accurately established.

DNRC performs three functions for canal projects-accounting, managing and engineering, and arbitrating. An examination of these functions in greater detail could produce a more sophisticated array of options and define the costs, advantages, and disadvantages of each.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

The state will seek to dispose of state-owned canal projects. Before canal ownership is officially transferred, the state will, where possible, require the water users to assume a greater proportion of the financial responsibilities of operating such projects.

WHY THEY ADOPTED IT

Because direct benefits from canal projects accrue only to private water users, those users should assume a greater proportion of the responsibilities involved in providing the benefits.

WHAT DNRC NEEDS TO ACCOMPLISH IT

Neither new legislation nor additional funds would be needed to carry out the above policy.

DNRC would, within the limits of staff time, take steps to charge water users for the services provided by the state in administering each project. Within the limits of staff time, DNRC would take full advantage of opportunities to transfer ownership of the canals should users be willing. DNRC would also search for other creative means of disposing of these projects. An active disposal program will be initiated for other canal projects when disposal of the Daly Ditches project is complete.

STATE INITIATIVES ON FEDERAL WATER PROJECTS

Most of the major water development, flood control, and hydropower projects in Montana have been constructed by federal agencies, principally the Soil Conservation Service (SCS), Water and Power Resource Service (WPRS)—formerly the Bureau of Reclamation—and the U.S. Army Corps of Engineers. The importance of federal projects such as Fort Peck Dam, Libby Dam, Yellowtail Dam, Canyon Ferry, and numerous others can hardly be overestimated. The federal water agencies and their projects have been widely praised as the mainstay of Montana's agricultural economy, but they have also been criticized for the environmental impact of their projects. Many miles of what had been the state's finest floating and fishing streams are now covered by federal reservoirs. Greenfield Bench, an irrigation project northwest of Great Falls that waters 80,000 acres and is essential to the regional economy, has also produced the single largest erosion problem in the state.

The federal agencies have many proposals for additional projects; these, like past projects, are welcomed by some Montanans and opposed by others. These agencies actively promote their proposals, and they have often demonstrated the political skill to overcome strong opposition.

The question is not whether Montana state government should try to influence federal projects within the state; it cannot avoid doing so. The federal agencies request state support of their proposals, since a governor's opposition can stop federal projects. And local government, citizens, and the Montana congressional delegation expect state government to support (or sometimes to oppose) projects that affect them. Given, then, that the state will eventually exert some control over such federal projects, there are several ways in which it can be done.

The State's Present Role In Federal Project Development

There are four ways in which state government has tried to influence federal water project proposals. The principal way is an expression by the governor of support for or opposition to a federal proposal. Executive opposition to a project in the planning stages stops the project; this has happened in Washington and Wisconsin.

The state position is generally developed by state agencies working with the governor's office. An example of this process is the recent preparation of a state position paper on the National Hydropower Study being done by the Army Corps of Engineers. The Corps study began with a long list of all potential hydropower sites in the nation. The states have veto power over all projects on the list. DNRC met with other state agencies to develop a common position on the Corps list. This position paper, recently presented to the Corps, stated that many proposals are unacceptable and that the Corps study process does not allow for an adequate state evaluation of some proposals.

Besides veto, state agencies have a second way to influence federal projects—they can provide technical advice to the state's congressional delegation. For example, DNRC, in cooperation with the Department of Fish, Wildlife, and Parks, has proposed measures to partially mitigate the adverse environmental impacts of converting Canyon Ferry to a peaking facility. The measures were accepted by Senator Melcher and funding was included in an authorization and appropriation bill considered by Congress.

A third way of influencing federal projects is to assist local citizens in promoting or modifying federal proposals in their region. An example is the assistance provided to the Muddy Creek Landowners and Cascade Conservation District working to rehabilitate the federal Greenfield Bench irrigation project to reduce erosion in Muddy Creek, which serves as a wastewater channel. DNRC and the Water Quality Bureau of the Department of Health and Enviromental Sciences have assisted the task force by helping to fund it and by providing technical advice.

The final method for influencing federal projects is to see that desirable projects are emphasized in the yearly priorities report at the appropriate river basin commission meeting. Both the Columbia and Missouri River basins have federally established commissions whose function is to coordinate local, state, and federal water resources activities. Each year the states submit to the commission a

list of their important activities for the coming year. The commissions use these lists to establish another list—the top water resources priorities within the basin. That water resources list influences Congress, and, in addition, the commissions lobby Congress to support listed projects.

Those are the methods the state has used in the past to influence federal decisions about water projects.The state could also develop a Memorandum of Agreement with federal agencies similar to one recently agreed upon between California and WPRS.

A Memorandum of Agreement

A Memorandum of Agreement (MOA) addresses possible conflicts between the state and the federal agency sponsoring a water project within the state. An MOA usually defines the procedures agreed to by both parties that will be followed in coordinating the management of the state's water. Such an agreement can clearly define the role of the state in the federal water planning process. An MOA between WPRS and California was designed to "eliminate conflicts between the plan of the authorized project and terms and conditions of California water right entitlements early in the planning process."

An MOA can also coordinate responsibilities of the federal agency and DNRC for the required environmental impact statements. DNRC must prepare an EIS as part of the administrative process of issuing water rights if the issuance of those rights could result in a significant environmental impact. It may be more efficient to incorporate this EIS into the federal agency EIS on the project than to do each separately.

There are four offices with which DNRC could pursue such an agreement: WPRS offices in Billings and Boise and the Army Corps of Engineers offices in Omaha and Seattle. An agreement with the Billings office of WPRS would probably occur first, and this agreement would serve as a model in discussions with the other offices.

There are several advantages to MOAs. They encourage the coordination of state and federal EIS studies. In addition, DNRC could develop a state position on a project more effectively and be better prepared to assist the Congressional delegation as requested if involved in the federal agencies' planning process.

The primary disadvantage to the state of an MOA would be the staff time required to negotiate it.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC should pursue the arrangement of suitable Memoranda of Agreement with those federal agencies that sponsor major water projects within the state of Montana.

WHY THEY ADOPTED IT

The state should try to exert as much influence as possible over the planning of federal water projects in Montana. The development of suitable Memoranda of Agreement with the appropriate federal agencies is an important tool.

WHAT DNRC NEEDS TO ACCOMPLISH IT

Existing funds and staff would be sufficient.

II. WATER ALLOCATION

In the arid west, economic well-being and the quality of life enjoyed by residents depend not just on water but on how it is allocated. Headwaters states like Montana must be particularly protective of their water. Downstream states, with more people, more industry, and more possible use of water look enviously at the water leaving Montana. By putting this water to use, they can limit its future consumptive use in Montana.

Within the state, allocation decisions are difficult and controversial. "Beneficial use," a legal term, includes use by agriculture, industry, or municipalities, and instream flows for water quality, fish and wildlife, and recreation. The division of waters among these uses has significant socioeconomic implications for Montana. The way that water is allocated today will help determine what Montana will be tomorrow.

This section will discuss some of the major water allocation issues facing DNRC today.

THE ROLE OF DNRC IN WATER ALLOCATION

DNRC has four roles in water allocation: issuing water rights, processing of applications for water reservations, water planning, and negotiating interstate compacts. The importance of these functions can hardly be overestimated. Both the Department of Health and Environmental Sciences and the Department of Fish, Wildlife, and Parks have responsibilities relating to Montana water, but neither has legal authority that so directly affects the resource as do DNRC's responsibilities in water allocation.

Water Rights Permits

Water use in Montana is generally guided by two legal principles. First, the water user is limited to diverting only as much as he can beneficially use. The second principle is known as the prior appropriation doctrine, "first in time is first in right." A user's right to a specific quantity of water depends on when the use began. The first person to use water from a source established the first right, the second person was free to use what was left, and so on. During a dry year, the person with the earliest date of use would have first chance at the available water to the limit of his established need. The holder of the second earliest date would have next chance, and so on.

Before 1973, Montana water law did not require the centralized recording and administration of water rights. Water rights were use rights (established by diverting and putting the water to beneficial use), filed rights (established by posting notice, filing at the county Clerk and Recorder's Office, then diverting the water to put it to beneficial use), or decreed rights (resulting from court adjudication).

The 1973 Montana Water Use Act establishes the way in which DNRC is to issue water rights. A permit to appropriate water shall be issued on these conditions:

1. If there are unappropriated waters in the source of supply, the amount requested is available:
    a. At those times when the water can be put to the use proposed by the applicant;

b. In the amount the applicant seeks to appropriate; and

c. Throughout the period during which the applicant seeks to appropriate;

2. The rights of prior appropriators will not be adversely affected;
3. The proposed means of diversion or construction are adequate;
4. The proposed use of water is a beneficial use;
5. The proposed use will not interfere unreasonably with other planned uses or developments for which a permit has been issued or for which water has been reserved;
6. An applicant for an appropriation of 10,000 or more acre-feet per year or 15 or more cubic feet per second (cfs) proves by clear and convincing evidence that the rights of prior appropriators will not be adversely affected.

Each application is evaluated by these criteria. When DNRC receives a proper application it must publish notice of the application in a newspaper of general circulation. In addition, DNRC notifies by mail any appropriator who may, according to its records, be affected by the proposed appropriation. Objections to an application may be filed by any water right holder who believes that the proposed appropriation may adversely affect him. The objection must show that there are no unappropriated waters in the source of supply, that the means of appropriation are inadequate, or that the property, rights, or interests of the objector would be adversely affected by the proposed appropriation; he may state any other pertinent objections.

If DNRC decides that an objection to an application may be valid, a public hearing on the proposed application is held. Usually the issue in question is water availability; each party attempts to demonstrate that water is or is not available for appropriation. Because of the general lack of identified and quantified water rights and streamflow information, most of the testimony presented is hearsay. Consequently, it is unlikely that, based upon the hearing, an application to appropriate will be denied.

When it issues a permit to appropriate water, DNRC may attach such terms, conditions, restrictions, and limitations as it considers necessary to protect the rights of other appropriators. DNRC often sets conditions for the permit using the information presented in a hearing on objections. Conditions can take a number of forms—the amount requested may be reduced, or the appropriator may be allowed to divert only during specified times or required to check water availability prior to diverting. DNRC is responsible for enforcing the conditions attached to a permit.

Water Reservations

The 1973 Montana Water Use Act provides that water may be reserved by the state or any political subdivision of the state or the United States or any agency of the United States. Such reservation may be for future or existing beneficial uses or to maintain a minimum flow or quality of water. As an example, over thirty applications for water reservation in the Yellowstone River Basin were received by DNRC. Applications came from state agencies, federal agencies, irrigation districts, conservation districts, and municipalities. The proposed uses of water included domestic use, irrigation, water quality, fish, wildlife, recreation, and storage.

An applicant for a reservation of waters must establish to the satisfaction of the Board of Natural Resources and Conservation:

1. the purpose of the reservation;
2. the need for the reservation;
3. the amount of water necessary for the reservation;
4. that the reservation is in the public interest.

Upon receipt of an application DNRC must publish notice and notify appropriators who may be affected by the reservation. If objections are received, a hearing is scheduled. DNRC normally prepares an environmental impact statement regarding the application.

The Board holds the hearing and makes the decision on the reservation application. DNRC usually recommends some action to the Board.

PROTECTION OF MONTANA WATER

The protection of Montana water from downstream claims is a growing concern in Montana. Many citizens and legislators have said that if the state does not somehow lay claim to water flowing through the state, this water will be lost for future use to Montana. This could happen if downstream states were able to put the water to beneficial use. If they were, any new consumptive use in Montana would be an infringement on these downstream rights. The downstream states could seek relief through court or congressional action and seriously limit further water use in Montana. Although this could happen theoretically, no attempt has yet been made to evaluate the likely downstream uses, identify the potential for a federal allocation detrimental to Montana, or to develop a strategy to oppose such an allocation.

The state's four largest rivers are the Kootenai, Clark Fork, Yellowstone, and Missouri. The Kootenai and the Clark Fork are apparently almost completely allocated in Montana. Hydropower rights on both rivers effectively limit the amount of water that can be used consumptively in the state. (These hydropower rights secondarily ensure instream flows in these rivers.) Therefore, only in the Yellowstone and Missouri drainages can downstream, out-of-state claims limit futute water development in Montana.

No one knows how serious the downstream challenge is to these rivers. Three major potential downstream uses of the Missouri are recharge of the Ogallala aquifer (which is being rapidly depleted), providing flows for extending navigation of the Missouri upstream to South Dakota, and supplying water for the Garrison Diversion Project in North Dakota. The likelihood of these developments is unknown.

Downstream claims to Montana water are a threat to the state only if they would preclude consumptive uses in Montana. If the potential for such Montana uses exists, then the loss of the option to develop would be adverse to Montana's economy, and the state should try to preserve that option.

There are three established ways in which federal law has been used to settle interstate disputes over water allocation: equitable apportionment, compacts, and Congressional apportionment.

A suit for equitable apportionment of interstate water is brought by one state against another. The basic issue is what present use of water must be discontinued in order to solve the conflict. The result is a decree that allocates water among current uses in the states. This method of allocation would probably occur for Montana only if developments in a downstream state were threatened by subsequent major increases in consumptive use in Montana. In this case the downstream state might sue and claim that Montana adversely affected its use.

A compact is an interstate agreement ratified by Congress. There are no criteria for allocation; the terms of the compact may be any agreed to by the parties. Compacts recognize current uses and, unlike equitable apportionment, divide the remaining unallocated water between the states, based upon anticipated need. State water plans and estimates of future development potential are important issues in compact negotiations. Montana should consider a compact if it seems likely that another state's future development would conflict with ours and that a suit might be successful.

The third possibility for allocation between states is Congressional apportionment. This avenue has been used only once, when the states involved could not reach an agreement. Congressional apportionment is not particularly desirable from the state's viewpoint because it bypasses state legislatures.

There are a number of ways in which a state can protect its water from downstream claims. These methods vary in effectiveness, and those that the state chooses to use will depend upon the forum in which it seeks to protect its water. Putting the water to beneficial use is clearly the most effective means of laying claim to it. Montana's reservation process is another method. Within the state a reservation is accorded equal legal status with a water right. Outside the state, however, the status of a reservation is unclear. If reservations are used to meet legitimate forseeable needs, and progess is made toward perfecting the reservations, they will certainly have more significance in interstate disputes.

The state water plan provides another mechanism for establishing a claim to water. Although probably less significant than the reservation, it is an attempt by the state to realistically assess future water needs, and would be important in interstate conflicts.

Other ways of establishing claims to water include statutory prohibitions on exportation of water from the state and the statutory prohibition of the use of water for coal slurry. The effectiveness of such prohibitions has not been tested.

Montana could adopt any of these approaches to interstate allocation of water:

1. Assume that water development is no longer important to Montana and that Montanans will not be concerned about interstate allocation;
2. Assume that water development is important to Montanans but that we do not believe that a downstream state would sue for equitable apportionment or would win such a suit; therefore, Montanans will not be concerned about interstate allocation;
3. Assume that water development is important and that our water use will conflict with use by downstream states. It follows that we must choose a forum for interstate allocation, either a compact or equitable apportionment, and develop a strategy for presenting our best case in that forum.
4. Assume that water development is important to Montana, that our future consumptive use may conflict with water use in downstream states, and that we are not aware of the extent of the possible conflict and cannot judge what our best strategy for interstate allocation would be. In this case, the state should investigate these issues.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC will encourage the development of Montana water for use by Montana. Further, DNRC should investigate Montana's future water needs, the extent of downstream development, and the threat such development poses to Montana water development. The result of the investigation should be a strategy to preserve Montana's water development options from identified downstream threats.

WHY THEY ADOPTED IT

Water is vital to the economic development of Montana. Increased use of the Missouri and Yellowstone rivers by downstream states could preclude future beneficial uses of water in Montana, and would impair Montana's economic development. Clearly Montana must develop a strategy to protect its waters from downstream claims.

WHAT DNRC NEEDS TO ACCOMPLISH IT

The development of this strategy will require an evaluation of the type and extent of development being contemplated in downstream states, the development potential in Montana, the methods available to the state for laying claim to its water and the forum in which that could best be accomplished.

The proposed investigation would also examine pros and cons to equitable apportionment and compacts and look at the potential of federal reservoirs to meet future water demands. An estimate of the cost to conduct such an investigation is given in table 2.

TABLE 2
The Cost of Developing a Strategy to Meet the Downstream Threat to Montana's Water

	Cost
One Planner	$35,000
Contract to evaluate equitable apportionment and contract options	25,000
Contract to conduct operation studies on federal reservoirs	25,000
TOTAL	$85,000

COORDINATING THE ADMINISTRATION OF WATER QUALITY AND QUANTITY

The Department of Health and Environmental Sciences (DHES) controls the discharge of pollutants into Montana waters by issuing discharge permits. It is guided in issuing those permits by water quality standards established by the Board of Health and Environmental Sciences. DNRC controls the depletion of the flow of Montana streams by issuing water rights permits; criteria of issuance established in the 1973 Montana Water Use Act guide DNRC in issuing those permits. The problem is that DHES's water quality standards and DNRC's criteria of issuance conflict. Depletions permitted by water rights granted by DNRC may reduce the assimilative capacity of a stream, resulting in violations of the water quality standards. On the other hand, strict adherence to the water quality standards may preclude diversions provided for by a water permit. That conflict is a symptom of the lack of coordination of the administration of water quality and quantity programs in the state. It also points out one reason for that lack—the two programs were established by different legislation, with different objectives.

Water Quality Responsibilities of the Department of Health and Environmental Sciences

So that the state of Montana would be able to assume control of programs created by federal law, the state's water quality laws mirror the federal ones. State water quality programs, then, meet the requirements and adopt the goals of federal water quality law.

The goal of the state's programs is to restore and maintain the chemical, physical, and biological integrity of Montana's water. One of the tools for doing so is the setting of water quality standards—a classification system (established by the Board of Health and Environmental Sciences) that groups the streams of the state according to their present and future most beneficial uses. The streams are classified according to the purity of their water. Besides the water quality standards, DHES also sets effluent standards (restrictions on the discharge of pollutants into state waters) and standards of performance (regulations that make sure that those who are discharging pollutants into state waters use the best available technology). DHES issues permits to discharge pollutants into state waters after determining that the proposed discharge meets these standards.

The activity of DHES that most affects DNRC's responsibilities is the establishment of water quality standards. The standards specify permissible levels of coliform bacteria, dissolved oxygen, temperature, sediment, and other indicators. Theoretically, if these standards are violated, the beneficial use of the water is threatened. Violations can occur either through a discharge of pollutants from point or nonpoint sources or by a depletion in flow that reduces the assimilative capacity of the stream.

A few streams—the Clark Fork, for example—have been reclassified because their water quality improved since the standards were adopted. However, because the law's goal is to improve or maintain the quality of the state's water, it is illegal to downgrade a stream's classification unless it was misclassified originally.

Water Quantity Responsibilities of the Department of Natural Resources and Conservation

Like its water quality laws, Montana's water planning laws are modelled after federal statutes—in this case, to allow the state to qualify for federal planning funds. The Montana Water Resources Act of 1967 identified DNRC as the agency responsible for formulating a state water plan.

So far, the state's main efforts toward formulating a state water plan have been its participation in three federal "Level B" studies—the Flathead, the Yellowstone, and the Upper Missouri. Only the Flathead Level B has been adopted by the state legislature as part of the state water plan, and its effectiveness is limited by the fact that entities other than the state bear the burden of implementing its recommendations.

Even though the 1978 reservation of water in the Yellowstone River Basin was a water-allocation function (as described below) rather than a water-planning function, it did establish, in effect, a portion of the state water plan for some time to come.

Unlike its water quality and planning laws, Montana's water rights law—the 1973 Water Use Act—is not patterned after federal law. That act requires DNRC to institute a permit system for all new appropriations of water and establishes the criteria of issuance that proposed appropriations must meet to qualify for permits. It also allows governmental entities to apply to reserve water for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water.

The criteria of issuance included in the Water Use Act govern the permitting functions of DNRC. In essence, if an application for appropriation of water meets the criteria of issuance, DNRC must issue the permit. Permits may be issued subject to conditions designed to protect the holders of prior water rights.

Conflicts Between the State's Water Quality and Water Quantity Programs

There are two main conflicts between the water quality responsibilities of DHES and the water quantity responsibilities of DNRC. The first is that, as explained above, DHES's water quality standards conflict with DNRC's criteria of issuance. Strict adherence to the water quality standards may preclude the diversion of water by someone who has a valid permit to use that water, simply because his diversion would reduce the amount of water in the stream, thereby reducing the stream's capacity to assimilate wastes, thereby raising the concentrations of pollutants in the stream to levels prohibited by the standards. Either applications to appropriate water must be denied, or water quality standards will be violated—and neither law gives DHES or DNRC the room to negotiate a workable compromise. The Water Use Act allows for the appropriation of water for beneficial use, but gives DNRC no clear authority to deny such appropriation to protect the water quality of existing rights. The federal statutes after which state water quality laws are modelled have as their single-minded objective the improvement or maintenance of water quality, with no provision for the availability of water for beneficial use.

The second conflict is between the water planning and the water rights functions of DNRC. The recommendations included in the Level B studies provide no guidance for issuing water rights. But even if DNRC were to formulate a complete state water plan describing how permits for appropriation should be granted or denied to meet the objectives of the plan, it would have no bearing on the existing water rights law, which clearly delineates the process for evaluating water rights applications, and the state water plan has no place in that process. The reason, again, is that these two functions were established by separate laws having different objectives.

Options for Resolving the Conflicts

1. The water quality standards could be included as part of the state water plan. DNRC could attempt to have the criteria of issuance changed to require that water rights be issued in accord with the state water plan, resulting in better coordination of DNRC's water planning and water rights functions as well as integrating DHES's and DNRC's programs.
2. The criteria of issuance could be changed to include a public interest criterion. Applications for water that would result in violation of reasonable water quality standards or would impair existing uses could be denied under such a criterion.
3. DHES could pursue reservations of water for water quality purposes in those streams, rivers, and lakes in greatest need of protection. This use of reservations has two advantages to the state. First, it gives DNRC an opportunity, in the environmental impact statement that would have to be prepared for any proposed water reservation, to look closely at the water quality of the affected stream, rather than relying merely on DHES's water quality standards, which are often quite broad. Second, the reservation process gives DHES some control over the only water quality problem it now has no control over—depletions.
4. The legislature could establish a law whereby the boards of the two agencies could jointly declare and establish water quality-controlled streams—those streams needing protection because of water quality degradation. As part of the designation, the development of a management plan for the river could be prepared by the two agencies.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

The reservation doctrine should be used to provide instream flows to protect water quality.

DNRC's authority to deny or modify applications for new water rights that may significantly affect water quality should be clarified.

WHY THEY ADOPTED IT	WHAT DNRC NEEDS TO ACCOMPLISH IT
The reservation doctrine is a part of Montana water law designed to provide a mechanism for, among other things, reserving water instream to protect water quality. DHES's Water Quality Bureau can control discharge of pollutants, but has no role in water allocation, except through reservations. Clarifying DNRC's authority to deny or modify applications for water rights that may significantly affect water quality will allow DNRC to fulfill its obligation to protect the quality and quantity of the rights of senior appropriators.	DHES's Water Quality Bureau is developing a list of high-priority streams in which reservations will be sought to protect water quality. The Water Quality Bureau has hired a hydrologist to work half-time on preparing the reservation applications. This effort is supported in concept by DNRC. DNRC is preparing legislation that would clarify its authority to deny or modify applications for new rights that would signficantly affect water quality.

HIGHLY APPROPRIATED BASINS

In some Montana river basins, there isn't enough water some years to satisfy the water rights already held—in other words, demand is greater than supply. In water-short years, junior appropriators—those who haven't held their water rights as long as some other water users in the basin—may help themselves to water without making sure that senior appropriators have been satisfied first. It's possible that senior appropriators may lose crops even in years when there should have been sufficient water for them to irrigate. To protect their rights from even greater threat of encroachment, they have to go to the trouble of objecting to all new applications for water rights in their basins.

Earlier, it was noted that it is unusual for an application for a water rights permit to be denied because of water availability, owing to a lack of definitive streamflow and water rights information. Where water is not available except during spring runoff, the permit issued by DNRC will carry conditions regarding when the water may be appropriated.

After an irrigator has obtained a permit, he must invest a good portion of work and capital to put his water to use, and he will want a return on that investment. During water-short years, the conditions on the permit may not seem as important as the mortgage on the property. The result: theft of water.

In some cases DNRC has enforced the conditions attached to water rights, but does not have the staff necessary for effective enforcement. If an appropriator feels he is being harmed and requests DNRC to enforce the conditions, the first step is an administrative show cause hearing. This process takes time—the irrigation season would be over before DNRC could take any action. To get relief more quickly, the harmed individual could seek a court injunction.

The district court can provide a water commissioner to enforce water rights on a decreed stream if requested by 15 percent of the decreed right holders, or when the owner of stored waters petitions the court for a commissioner to distribute the stored waters. A decreed stream is one on which the district court has adjudicated the water rights following a court proceeding of one appropriator against another. It is estimated that only 15-20% of Montana's streams have been decreed.

In a number of western states, a state-employed water master divides the water according to existing rights when requested. These water masters are retained only during the irrigation season and their salaries are paid by the water users.

Six options exist for dealing with highly appropriated basins:

1. DNRC could develop information programs to impress upon people that water is limited in these basins and thus discourage applications initially. Water availability studies could be conducted and published and media coverage obtained. In some instances a water commissioner could be requested. Enforcement of a few conditional permits would demonstrate that DNRC takes the conditions seriously.
2. The burden of proving whether water is available for appropriation could be switched from the objector to the applicant. This would probably result in fewer permits being issued in highly appropriated basins. Currently, the permit will be issued if there is any evidence that water is available, even if that availability were limited—for instance, if the water were available only in the spring. In that case, conditions will be attached to the permit specifying when water can be taken. As noted earlier, DNRC's enforcement of these conditions is difficult. If the burden were shifted to the applicant he would need to show by a preponderance of the evidence that water is available in an amount and during and throughout the period when he seeks to appropriate. In many highly appropriated basins the applicant would not be able to produce this evidence.
3. Some western states have closed basins to further appropriations when they became highly appropriated. There is precedent for such action in Montana water law: the Board of Natural Resources and Conservation is empowered to establish controlled ground-water areas. Control or closure of a basin could take a number of forms. The basin could be closed to further appropriation only during certain times of the year, or closed only to some uses.
4. DNRC's authority to deny water right applications on the basis of water availability could be clarified. As noted earlier, DNRC is now obligated to issue a permit even if water will be available only rarely and it is clear that the appropriator must use it more frequently to obtain a return on his investment. As discussed in No. 2 above, DNRC will issue the permit with conditions describing when water may be appropriated. These conditions are difficult to enforce and consequently the conditions are often ignored. Clearly it would thus be in the best interests of senior appropriators if the application could be denied.
5. The legislature could fund an enforcement branch within DNRC. This would enforce conditional permits, thereby reducing water theft and discouraging further applications.
6. DNRC and the legislature could take no action. In this case, the burden on senior appropriators to protect their right to the water would continue and probably increase. More new permits would be granted in basins where there is already conflict for water; eventually, other areas of the state would become overappropriated.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC should establish an information program in highly appropriated basins. The purpose of this program would be to explain how water availability affects existing rights and applications for new rights.

The burden for proving that water is available for appropriation in a hearing on an application for a new water right should lie with the applicant.

DNRC's authority to deny applications for new water rights in highly appropriated basins should be clarified by the legislature.

A small enforcement staff should be added to the Division, to enforce the conditions attached to water right permits. Emphasis would be placed on those operators who are causing significant problems for other appropriators or who are conspicuous offenders in other ways.

WHY THEY ADOPTED IT

Even though Montana is one of the few states that has unappropriated water, some Montana basins are overappropriated. Relieving the problems of overappropriation requires a diverse approach. Because it is a relatively new problem to Montana, it must be publicized and explained. The rights of senior appropriators must be protected; placing the burden of proof on the applicant and clarifying the Division's authority to deny or modify applications for new rights in highly appropriated basins will protect those senior rights. Finally, as conflicts between water users increase in these basins, more active enforcement will be necessary.

WHAT DNRC NEEDS TO ACCOMPLISH IT

DNRC is writing rules that will place on the applicant the burden of proof of water availability.

Draft legislation that would clarify DNRC's authority to deny permits in highly appropriated basins is being prepared by DNRC in response to a recommendation from the Water Policy Review Advisory Council.

DNRC has submitted to the Governor's office a budget modification request for a limited water rights enforcement program. The staff for the program would include a lawyer, a civil engineer, and a secretary.

The cost of the program is shown in table 3.

A cost estimate for an information program is given in table 4. The hydrologist would conduct water availability studies, the economist would provide information on the economic feasibility of irrigation given the water availability, and the information officer would develop informational pamphlets and conduct public meetings.

TABLE 3
The Estimated Cost of Enforcing Water Right Permits

	Cost
Staff	
Lawyer II	$17,684
Civil Engineer II	14,763
Secretary I	9,000
Supplies, Contracts, etc.	20,000
TOTAL	$61,447

TABLE 4
The Estimated Cost of an Information Program in Highly Appropriated Basins

	Cost
Staff	
Information Officer	$ 5,000
Hydrologist	12,500
Economist	1,800
Services	
Computer Time	1,000
Typing and Layout	1,100
Printing	500
Postage	1,100
Travel to Public Meetings	
Per Diem	2,100
Mileage	600
SUBTOTAL	25,700
Contingency Fund—20%	5,140
TOTAL (rounded)	$31,000

THE PUBLIC INTEREST CRITERION

At least ten western states include public interest criteria in their water law. These criteria allow the agency responsible for issuing water rights to consider other potential effects of an application than only water availability and its effects on other appropriators. Issuing water rights can also affect a basin's economics, land use, and environmental quality. Montana's current criteria of issuance, and DNRC's interpretation of them, do not require DNRC to consider some of these implications when issuing water right permits.

Public interest criteria are of two types—general and specific. A typical public interest criterion of a general type might read, "Based upon the public interest and the economic welfare, the state engineer may in his discretion approve or disapprove any application for a water right." The statutes of North Dakota, Oregon, Idaho, and California are much more specific about what shall be considered in determining the public interest. For example, in North Dakota the state engineer is required to consider all of the following:

1. The benefit to the applicant resulting from the proposed appropriation.
2. The effect of the economic activity resulting from the proposed appropriation.
3. The effect on fish and game resources and public recreational opportunities.
4. The effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation.
5. Harm to other persons resulting from the proposed appropriation.

This law is similar to HB 491, which was considered by the 1975 Montana legislature. The major difference was that HB 491 would have applied only to applications seeking water in excess of 10,000 acre-feet or 15 cfs per year. The bill passed the House but was killed in the Senate Agriculture, Livestock, and Irrigation Committee.

A public interest criterion does exist in Montana water law. It appears in that section of law on reservation of water. An application for a reservation must show:

1. The purpose of the reservation. The beneficial use or uses to which the reserved water will be applied will be indicated.
2. The need for the reservation. The applicant shall describe why a water right by permit will not meet the needs of the applicant.
3. The amount of water necessary for the purpose of the reservation.
4. That the reservation is in the public interest. The applicant shall explain the public benefits which will accrue from the reservation.

It is interesting that, even though public interest is important in establishing reservations, it is not included in the criteria of issuance. What would be the effect of adding a public interest criterion to the criteria of issuance?

1. It would allow DNRC to evaluate the economic feasibility of the proposed use and the effect of the appropriation on the economy of the state. For example, in 1979, DNRC received an application that proposed to divert water from the Yellowstone River for industrial, municipal, and irrigation purposes. The water would be diverted below the mouth of the Powder River and moved via pipeline to the vicinity of Sheridan, Wyoming. The cost of the pipeline, 9 feet in diameter and 230 miles long, was projected by the applicant to be $200,000. DNRC's Engineering Bureau developed a cost estimate for the pipeline that came to $1.4 billion. Using projections of water needs and costs in the area developed for the Yellowstone Level 'B' Study, DNRC calculated

that the most optimistic project revenues would be $80,190,000 per year. At that rate, the applicant would lose about $72,000,000 in the year 2000. Before the year 2000, losses would be greater. The application is pending action by DNRC.

If a permit is issued, a large quantity of water may be unavailable until the permit is revoked because the applicant did not make satisfactory progress toward completion of the appropriation. However, DNRC cannot deny the application with the existing criteria of issuance.

2. The effect of a proposed use on fish, game, and public recreation could be evaluated in the issuance of water rights—they cannot be under existing statutes. In Utah, a state that seldom invokes its public interest criterion, an applicant sought a water right for a fish hatchery adjacent to a stream, Black Smith Fork, noted for its sport fishery. The permit was denied because it was felt that the discharge from the hatchery would cause a water pollution problem that would threaten the trout population in the stream.
3. The effects of the proposed use on the public health and safety could be considered. Some appropriations—those, for instance, that would result in contamination of domestic wells—could threaten the public health and safety. Saline seep, which can be aggravated by irrigation, has resulted in the contamination of shallow aquifers used for drinking water, as well as affecting property values.
4. A public interest criterion would also help to resolve the issues of coordinating the administration of water quality and quantity, and of highly appropriated basins. It would require DNRC to deny applications that would significantly impair water quality or threaten existing water rights.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

The Council and DNRC agreed that DNRC should prepare legislation to be presented to the 1981 legislative session that would add a public interest criterion to the existing criteria of issuance.

WHY THEY ADOPTED IT

It is apparent that the existing criteria of issuance are not adequate to properly evaluate an application for a water right. The issuance of a water right can have far-reaching consequences for the rights of senior appropriators, the local economy, public health, public recreation, and other important considerations. As water becomes increasingly scarce, these issues will become more complex. The addition of a public interest criterion to the criteria of issuance would require DNRC to consider these factors in the issuance of water rights.

WHAT DNRC NEEDS TO ACCOMPLISH IT

Only the legislature can rule to adopt a public interest criterion.

WATER RIGHTS PREFERENCE SYSTEMS

Montana ranks water rights by priority date; in times of shortage, water rights are satisfied according to that date. The preference system, another method of allocating water, establishes a water right priority system based on the type of water use rather than on the first in time, first in right principle. Water uses are ranked; during a shortage, the rights for preferred uses receive water first. Within a particular use category the rights are prioritized by date, the most senior being superior. As an example of a preference system, Texas water law recognizes the following uses in order of preference: (1) domestic and municipal uses, (2) water used in the process of converting materials into things that have greater usefulness and commercial value, (3) irrigation, (4) mining and the recovery of minerals, (5) hydroelectric power, (6) navigation and (7) recreation and pleasure.

The Montana Legislature has, on several occasions, considered bills to establish water right preference systems. A discussion of the advantages and disadvantages of such legislation follows.

Advantages of Preference Systems

The major advantage of a preference system is that it allows the state to guarantee first rights to the state's water to uses considered most beneficial. For instance, if Montanans desire an agricultural economy, they may institute a preference system that ensures that water will be available to agricultural users above other users. Similarly, if Montanans wish to discourage a type of industry or use of water, a preference system may be designed to do so.

Current Montana water law, including the prior appropriation doctrine and provisions for the sale and transfer of water rights, may not distribute water as most of the state's citizens would want. For instance, industry can usually afford to purchase a water right held by an agricultural user because the marginal value of water in an industrial process is much greater than the marginal value of water used to irrigate most types of crops that can be grown in Montana. Even though agricultural rights greater than 15 cfs may not be transferred to industrial uses, industrial users will be guaranteed a supply if water in lesser amounts is available and if their major competitors are agricultural interests. If it is important to the people of this state to preserve agriculture, and if there is inadequate water to support both agriculture and other industries, a preference system may be able to assure that irrigators receive what remaining water is available.

Disadvantages of Preference Systems

The most serious disadvantage of instituting a preference system is that Montana's current attitudes about the use of water would be legislatively locked into place. Our preferences about the use of water may be outdated within five years, but DNRC and Montana water users would be bound by an inflexible system that no longer favors what Montanans consider the most beneficial use of water.

If, on the other hand, a preference system were initially established and then reevaluated and reordered by each legislature, chaos would result for both administrative personnel and water users. Water would be allocated according to a different system every two years. The administration of such a system would border on the impossible. In fact, the cost in time and money of instituting and maintaining any preference system would probably be prohibitive.

Preference systems discourage investment in water development because they make water rights more uncertain. An appropriator who knows that his right may be altered will be less likely to invest in water development.

Preference systems ignore the relationships among elements of the regional or state economy. For instance, if water is not available for industrial use because agriculture is preferred, then industries necessary to agriculture (such as food processing) may go out of business. Farmers and ranchers would be hurt by the weakening of the market for their produce.

Preference systems may not be economically efficient. Classes of use with the highest social priority may not be those that can use the water most productively. Further, preference systems have little impact where water is already in short supply; court rulings in Colorado and Nebraska have held that preference systems cannot reorder existing rights. Absolute preference systems may, in addition, be unconstitutional in appropriation states.

The Subcommittee on Water Rights, in its 1978 report to the 46th Legislature, studied the use of preference systems in Montana and concluded that it would not consider the preference system further. That committee was probably aware that most states that have adopted preference systems have been dissatisfied with them.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

The adoption of a preference system would not be in the best interests of Montana or its citizens. DNRC and the Council advise the legislature against enacting a preference system.

WHY THEY ADOPTED IT

The basis of Montana Water Law is the prior appropriation doctrine: "first in time, first in right." The adoption of a preference system would totally restructure the Montana water right system. Each time the preferences were changed, the water right system would be in chaos. A preference system would greatly complicate the administration of water rights with little or no benefit to the state.

WHAT DNRC NEEDS TO ACCOMPLISH IT

No action is necessary.

III. WATER RESOURCES DATA MANAGEMENT

The several water management programs within the state were designed to meet different needs. Water resources data collected for each of these programs may be of limited usefulness to other agencies because of the way it was collected and stored or because others are not aware of its existence.

Today's water resources decisions are complex, and they require current data. Much of the data available to Montana's water agencies is outdated or inadequate. As an example, the Department is often hampered by not knowing the existing water rights in an area. This information, which is often needed and seldom available, will someday be available as a result of the current statewide adjudication program.

Water resources data collection is usually conducted by individual agencies for single-purpose projects with no thought for the needs of other water resource management agencies. As a result, data that would have been widely useful is collected in a way that makes it useless to all but the collecting agency. Data collection may be slow and inefficient, too, because outdated methods are used. There are new ways of collecting resource data that are cost-effective, accurate, and fast.

Data storage is also of concern. Important information stored in individual agency files, often without proper definition, is unavailable for general use.

Data retrieval is another problem. Water resources data is dispersed among many agencies. Researchers, managers, and planners have no choice but to make repeated, time-consuming searches among a large number of possible sources. A central catalog of state water resources data would help, as would standardizing the format for storing collected information.

One answer to the problem of adequate data storage and retrieval is to develop a Montana water database system. Similar systems are used in Texas, Iowa, Nebraska, and other states. In these systems, a centralized data system incorporates all water resources information collected by water resources agencies. An interagency steering committee oversees the program, and information storage and retrieval is handled by a separate data management unit working with the natural resources agencies that gather the data. Because of the volume of data in such a system, the agencies must provide the data in machine-readable form, with computerized data storage and retrieval.

A Montana database could mesh with state water data systems throughout the nation. Several Montana agencies are now evaluating the National Water Use Data System (NWUDS) program of the U.S. Geological Survey. The state could use NWUDS as a core for a Montana water data system; matching funds might be available. The federal government has several other water database systems that could be used, among them the National Water Data Exchange (NAWDEX) of the U.S. Geological Survey and the Water Quality Storage and Retrieval System (STORET) of the U.S. Environmental Protection Agency. These systems may provide economical and ready access to nationwide water resource data. Even so, for state needs, some have too narrow a focus, and their data may not be specific enough because they are frequently used for regional water assessments and are available in summary form only. Montana's raw data may not be readily entered and extracted from these database systems. They may not be compatible with state computer systems. Finally, since these programs are federally controlled, the state may not be able to set operational and data collection priorities.

A third course of action, that of sustaining the current system (or lack of one), would not be productive, since our present database is fragmented and does not contain current information. Montana's present water data problems, which are serious enough to demand resolution, would continue.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

DNRC will pursue with other water resource management agencies the coordination of the collection, storage, and retrieval of statewide water resources data (this includes establishing common standards and formats), and the elimination of duplicative water resource data collection.

The following steps would accomplish those goals:

1. Broaden the present Montana Water Use Data System (MWUDS) to include all water resources data.
2. Use the interagency steering committee for MWUDS to coordinate a statewide water resources data system. Use MWUDS personnel to develop the system.
3. During the first half of the FY 1982-83 biennium, conduct a comprehensive survey of existing water resources data; find out where there is duplication, where more data is needed, and what other needs there are. Prepare a water resources data atlas of existing data files.
4. During the last half of the FY 1982-83 biennium, design a system for transferring water resources data to those agencies that need it.
5. Prepare a report to the 1983 Legislature that shows what has been accomplished to establish a water resources data system and makes recommendations for continuing and maintaining such a system.

In addition the Council indicated its support for the Bureau of Mines and Geology appropriation request of $360,000 to be used to collect groundwater information. The state is seriously lacking necessary groundwater data. This appropriation represents a step to fill that gap.

WHY THEY ADOPTED IT

Up-to-date, reliable water resources data is needed to make sound management decisions. These recommendations will help to provide that data at a reasonable cost with a minimum of duplication between state agencies.

WHAT DNRC NEEDS TO ACCOMPLISH IT

State funding necessary to develop a water data system amounts to about $156,000 for the FY 1982-83 biennium (fiscal year 1982: $62,000; fiscal year 1983: $94,000). This support would be matched by funds from the U.S. Geological Survey.

The appropriation request for the groundwater work to be done by the Bureau of Mines and Geology amounts to $360,000 for the biennium.

IV. MONTANA'S FLOODPLAIN MANAGEMENT PROGRAM

Montana has promoted floodplain management for communities since the early 1970's. The Montana Floodway Management and Regulation Act, passed in 1971 and revised in 1973, committed DNRC to work with local units of government to develop and launch floodplain management programs that mitigate flood hazards through locally enforced regulatory measures (including zoning, building permit systems, and subdivision regulations) in areas suceptible to flooding.

State law requires DNRC to see that the public has sufficient opportunity to review the floodplain delineation studies that demarcate the 100-year floodplain boundaries within which land use restrictions will apply. In most cases, DNRC holds public hearings in the affected communities and checks appeals of the delineation study results to see if changes in the floodplain boundaries are necessary. In the end, the Board of Natural Resources and Conservation adopts the final floodplain boundaries. This entire process, from public hearing through Board adoption of study results, is known as the state designation process.

Initially, most activities of DNRC's floodplain management activities were directed at satisfying the requirements of the 1971 Floodway Management and Regulation Act. This limited emphasis changed later in the decade. Because annual disaster relief payments to victims of flooding amount to many millions of dollars and continue to rise at an alarming rate, the federal government is also interested in encouraging measures that would mitigate flood losses. The National Flood Insurance Program (NFIP), created in 1968, enabled property owners to buy flood insurance at reasonable, federally-subsidized rates. That insurance is available only to property owners in communities that have agreed to restrict development in flood-hazard areas. The early NFIP program, which was voluntary with no effective sanctions imposed against eligible communities that chose not to participate, was largely unworkable. But legislation passed in 1973 as part of the Flood Disaster Protection Act placed severe restrictions on federally-funded assistance to eligible communities or individuals who continued to resist enrollment, virtually mandating that all identified flood-prone communities in the nation participate in the NFIP.

The rise in prominence of the NFIP has added significantly to the duties and responsibilities of DNRC. DNRC's role as state coordinator for the national program now dominates its activities, even though state requirements for floodplain management must be simultaneously fulfilled.

A number of important issues affect floodplain management in Montana. First, the state designation process must be completed before many local governments can draft, adopt, and enforce land use regulations in flood-hazard areas, which they must do to attain compliance with federal and state floodplain management mandates. At present, DNRC is extensively involved in the state designation process. Municipalities and counties may participate in the process, but few do.

Second, little is being done to explain and promote existing floodplain management programs. Because these programs involve land use regulations, they are usually not well received by property owners.

Third, it has been hard to keep local officials informed of the progress of delineation studies and on how the study results will affect their communities. Failure to keep the public informed can lead

to conflicts between landowners who had planned to develop flood-prone areas and officials charged with enforcing land-use regulations.

Finally, each community is ultimately responsible for assuring that development of property in identified flood-prone areas complies with the community's floodplain land use regulations. Frequently, no one locally has the technical know-how to check for compliance. If the floodplain management program is to be effective, proper compliance review is necessary. But, because of present commitments to other aspects of floodplain management, DNRC is not always able to provide the necessary assistance.

OPTIONS FOR MONTANA'S FLOODPLAIN MANAGEMENT PROGRAM

Montana could pursue any of the following four options with regard to floodplain management.

The First Option: Drop State Involvement with Floodplain Management

Pursuit of this option would eliminate the most effective mechanism for a sound approach to floodplain management in Montana. The involvement of state government in floodplain management is essential for these reasons:

1. State enabling legislation contained in the Montana Floodplain and Floodway Management Act gives counties the necessary authority to permanently regulate land use in flood-prone areas. Without this power, most Montana counties would not be able to comply with federal floodplain management mandates.
2. State involvement promotes a consistent approach to floodplain management throughout Montana. It assures that the criteria used to delineate floodways remain uniform, so that communities required to regulate flood-prone land do so on the same scale of flooding risk. State involvement also encourages the application of similar land use restrictions to similar types of activities that may extend across local governmental boundaries.
3. Through the state, assistance is readily available to local governments requesting information, advice, or interpretation related to state and federal NFIP requirements. The next best source for this service would be the Federal Emergency Management Agency (FEMA) Regional office in Denver.

The Second Option: Eliminate the Need for the State Designation Process.

Pursuit of this option would involve a revision of the Montana Floodplain and Floodway Management Act. One responsibility of DNRC is to provide opportunities for public review of floodplain delineation studies. The goal of any new legislation under this option would be to shift this responsibility from DNRC to the communities.

DNRC has advertised, prepared for, and conducted many of the public hearings required in the state designation process. As of February 1980, DNRC had led hearings for nearly all of the counties and approximately 85 percent of the municipalities for which detailed delineation studies had been completed. DNRC also is responsible for field checks on appeals received at hearings. These activities take up a considerable amount of DNRC staff time and budget.

New legislation to accomplish this option would contain three provisions. First, it would allow local governments to regulate floodplain land use without making this power dependent upon the state designation process. For instance, stipulations in new legislation might allow communities the authority to institute a building permit system only where this power is used (1) to regulate land use in identified floodplains and floodways, and (2) to comply with state and federal requirements for floodplain management.

Second, communities would be specifically directed to adopt and enforce floodplain management regulations at least as strict as the established state minimum standards. This provision would require local governing units to manage their own floodplain regulatory program, and would release DNRC from having to administer a local program if the affected governing unit refused. The state's approach to floodplain land-use regulation across the state would still be consistent under this provision.

Third, the amendments would ensure that floodplain delineations continue to be based on established state, rather than federal, criteria—a necessary step in maintaining state-wide consistency in floodplain and floodway determinations.

Legislation emphasizing greater local government participation in the review and appeals process would require technically competent personnel at the local level. This could be a difficult obstacle. Although the threat of federally-imposed financial restrictions may provide sufficient impetus for communities to find ways of adequately assuming this increased involvement, it would be a major expense, especially for smaller cities and counties. DNRC could continue to provide some assistance in field reviews of appeals and would act as a technical consultant to local floodplain management officials, but its primary duties would be to assist communities in determining compliance with their floodplain land use regulations and in interpreting state and federal statutory and procedural requirements related to floodplain management.

The Third Option: Continue the State's Present Role

Federal Insurance Administration (FIA) flood insurance studies for many Montana communities have yet to be completed. Detailed flood insurance studies for approximately 24 Montana communities are scheduled for completion within the next year. The last of these studies are to be concluded by mid-1982. But the intervening period will be hectic as DNRC attempts to conduct the necessary public hearings and see that the study results are adopted by the state through the designation process. Because of the increase in workloads that the incoming studies will cause, additional staff and financial support will likely be required if DNRC is to adequately fulfill its responsibilities.

Much of DNRC's floodplain management activities arise from its role as state coordinator for the NFIP. Because this role will demand an even greater investment of time and resources than it has in the past, DNRC has applied for financial assistance through the State Assistance Program of the NFIP. The grant proposal requested approximately $68,000 and $50,000 for fiscal years 1981 and 1982 to support those activities that culminate in the official state adoption of FIA floodplain delineation study results. If the grant request is denied or significantly reduced and the present program budget cannot be increased to cover projected costs, DNRC's ability to act as state coordinator will be jeopardized. The state's past participation in the NFIP justifies federal financial assistance in support of Montana's Floodplain Management Program.

The Fourth Option: Increase State Floodplain Management Responsibility

State responsibility might be expanded in three areas:

1. Information activities could be aimed at increasing the general public's understanding of floodplain management. DNRC has already published an information pamphlet on the state's Floodplain Management Program. More frequent contact with affected property owners and more effective use of the media would go far toward explaining why we have floodplain management in Montana, how it works, and what progress has been made. But DNRC can't do any more with the budget it has.
2. The state could place greater emphasis on keeping local community officials up-to-date on the progress of floodplain delineation studies and on explaining to them the Floodplain Manage-

ment Program. To accomplish this, DNRC personnel would maintain closer contact with these community officials. Budget limitations currently preclude this.

3. DNRC could spend more time helping communities in their review of proposals for subdivisions to determine compliance with floodplain management standards. The need for this type of assistance has already been noted. Even greater state involvement might be considered. For instance, approval of a proposed development in an identified floodplain might be withheld until review of the proposal by DNRC. Assumption of this responsibility would require one additional full-time staff member and some allowance for travel.

THE POLICY ADOPTED BY DNRC AND THE COUNCIL

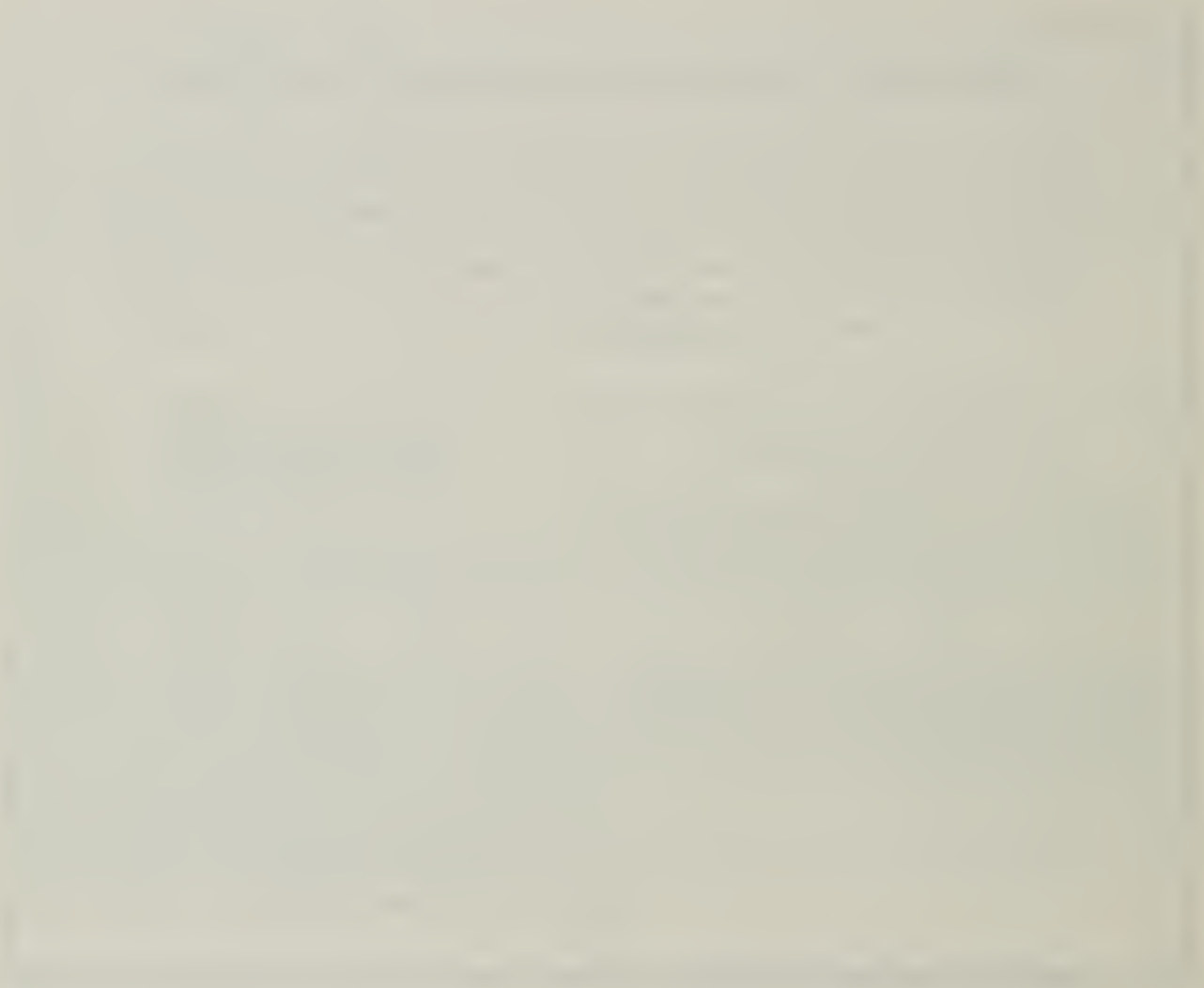
DNRC will continue its present roles as the state coordinator for the National Flood Insurance Program and as the primary means of promoting compliance with the Montana Floodplain and Floodway Management Act. More emphasis will be placed on informing the general public, community officials, and local floodplain administrators, justifying floodplain management concepts in general, explaining how floodplain management programs work, and providing information on the progress and effectiveness of local floodplain management efforts.

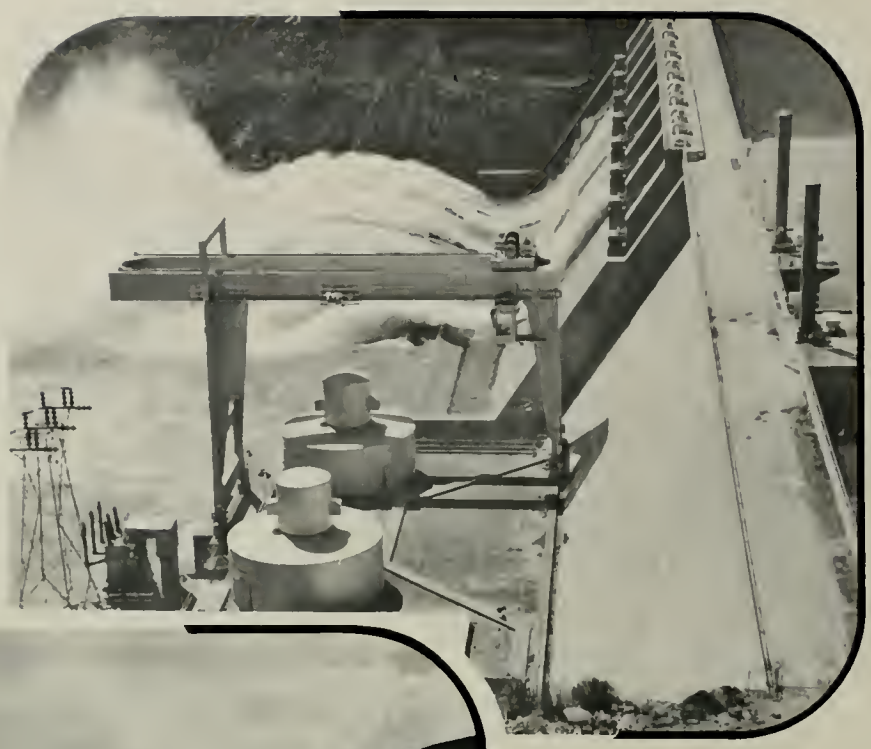
WHY THEY ADOPTED IT

Resistance to floodplain management is due in part to a lack of understanding by the general public and community officials of the goals of floodplain management and how the program works. The state, through DNRC, should provide floodplain management information to the public. Responsibility for the enforcement of local floodplain land use regulations should continue to rest with local government.

WHAT DNRC NEEDS TO ACCOMPLISH IT

No new legislation is required for the above policy, nor should any appropriations above present levels be needed from the state legislature. DNRC hopes to receive from the Federal Emergency Management Agency approximately $43,000 in state assistance funds to support Montana's participation in the national Flood Insurance Program during federal fiscal year 1981, and a similar amount during federal fiscal year 1982. With these funds, DNRC intends to hire a Program Coordinator and a half-time clerical-technical employee.





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